

ABSTRACT OF THE DISCLOSURE

A pressure fluctuation parameter (for example, a statistical indicator such as a root-mean-square value) from a set of differential pressure measurements between the inlet and the outlet of a fuel cell reactant flow channel carrying vaporized water is used to define flooding onset. Vaporized water in the flow of gas (air) through the flow channels is controlled in response to the parameter. Benefits include efficient operation (i.e., minimized stoichiometry) and effective management of rapid power transients in a fuel cell.